AUTO UNION

AUTO UNION

DKW

DKW Hobby

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AUTO UNION G·M·B·H

OWNER'S GUIDE

issued

DKW Hobby

WILL ACCOMODATE TWO

This instruction manual clearly explains the driving and maintenance of the vehicle and should be read before taking your

DKW HOBBY

on the road.

Only the objects of sale (including accessories and fittings) stipulated in the Sales Contract will be supplied.

We reserve the right to make any necessary alterations for technical and manufacturing reasons. No particulars in this booklet can be used as the basis for a claim for compensation of any kind against this Company.

HAPPY MOTORING!

Yours,

AUTO UNION G·M·B·H

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IMPORTANT DATA OF YOUR DKW HOBBY

Licence plate .....
Date registered .....
Place registered .....
Chassis No. .....
Engine No. .....
Key No. for steering lock .....
Key No. for saddle lock .....

TECHNICAL DATA

1. Engine: 1 cylinder, two-stroke, with reverse scavenging

Cooling	by fan
Bore	1.77 in. (45 mm)
Stroke	1.85 in. (47 mm)
Swept capacity	4.52 cu. in. (74 cc.)
Compression	6.3 : 1 to 6.5 : 1
Max. output	3 BHP at 5000 rpm
Max. torque	3.4 ft.-lbs. (0.47 mkg) at 4250 rpm
Carburetter	Bing 4/14/1 with starter slide
Main jet	No. 84
Needle jet	No. 2.17
Jet needle	in 3rd groove
Max. speed solo	37 mph (60 km/h)
with two passengers	34 mph (55 km/h)
Fuel consumption under most economical conditions*)	approx. 160 mpg.

2. Electrical System: flywheel magdyno, 6 volt 17 watt
flywheel magdyno, 6 volt 20 watt frem engine No. 03042312

Sparking plug	Bosch W 225 TI or Beru 225/14 u2
Sparking plug gap	16—20 thou
Contact breaker gap	12—16 thou
Advanced ignition	.102—.110 in. BTDC
Headlamp	twin filament 6 V 15/15 W bulb
Tail light	6 V 2 W spherical bulb
Tail light	6 V 5 W spherical bulb from chassis No. 03542304
Horn	6 V 3.6 W a. c.

3. Power Transmission: infinitely-variable automatic V-belt transmission — Uher system — fixed ratio intermediate gear, chain drive to rear wheel

Gear ratios:

from engine to intermediate gear	1 : 1.51 to 1 : 1.93 infinitely-variable V-belt drive
fixed ratio of intermediate gear	1 : 3.6 helical-cut gear wheels
intermediate gear to rear wheel	1 : 3.5 roller chain transmission
total ratio	1 : 8.33 to 1 : 24.4
chain	normal type ½ × 3/16" roller chain with snap link joint (1 × 12.7 × 4.88 × 7.55 × 100 links DIN 8180)
chain sprockets	drive sprocket 16 teeth rear wheel sprocket 56 teeth

*) The average consumption was determined at a uniform speed 2/3 of the maximum speed on a dry, level road and with no wind. Measurements taken in both directions and plus 10 percent.

4. Frame: central tubular frame with bottom plate struts

Front forks	telescopic
Rear wheel suspension	swinging arm with rubber buffers
Stand	side prop at centre of frame, left
Rims	deep bed 1.50 A x 16" rim
Tyre size (front and rear)	2.50 × 16"
Tyre pressure, front	18 lbs./sq. inch
rear, solo	23 lbs./sq. inch.
rear, with pillion passenger	32 lbs./sq. inch.
Foot brake	internal expanding brake on rear wheel operated over brake cable
Hand brake	internal expanding brake on front wheel operated over brake cable
Diam. of brake drum front	5"
rear	4 1/8"
Width of brake shoes	¾"

Capacities:

Oil in telescopic forks	0.087 pts. SAE 20 engine oil
Oil in intermediate gear	0.15 pts. SAE 90 gear oil
Fuel tank	1.43 galls. mixture including ¼ gall. reserve

5. Dimensions and Weights

Wheel base	53 in.
Overall length	77 in.
Overall height	35½ in.
Saddle height	29 in.
Overall width	26.4 in.
Ground clearance	4¾ in.
Turning circle	10 ft.
Rated total weight	507 lbs.
Camber of front wheel	2 1/8 in.
Handlebar turning circle	88 degrees

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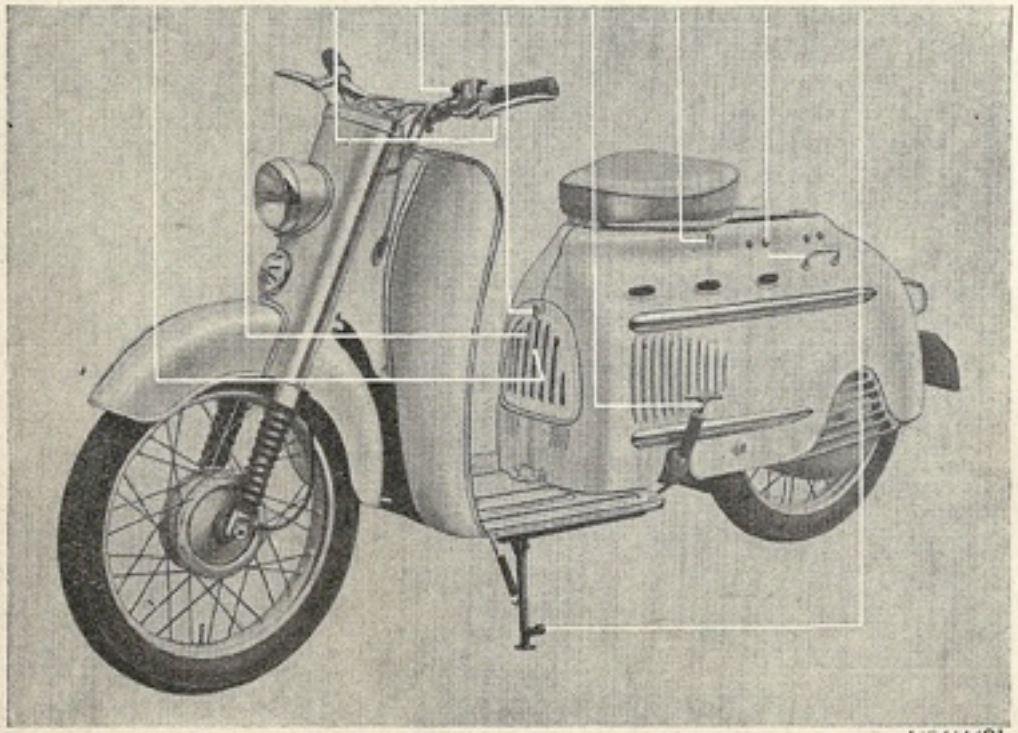
3. CONTROL LEVERS OF THE DKW "HOBBY"

1. Fuel tap
2. Air control lever on carburetter
3. Disengaging lever with catch
4. Short-circuiter
5. Knob on frontal grill of the engine cowling
7. Saddle lock
8. Lifting handle
9. Stand



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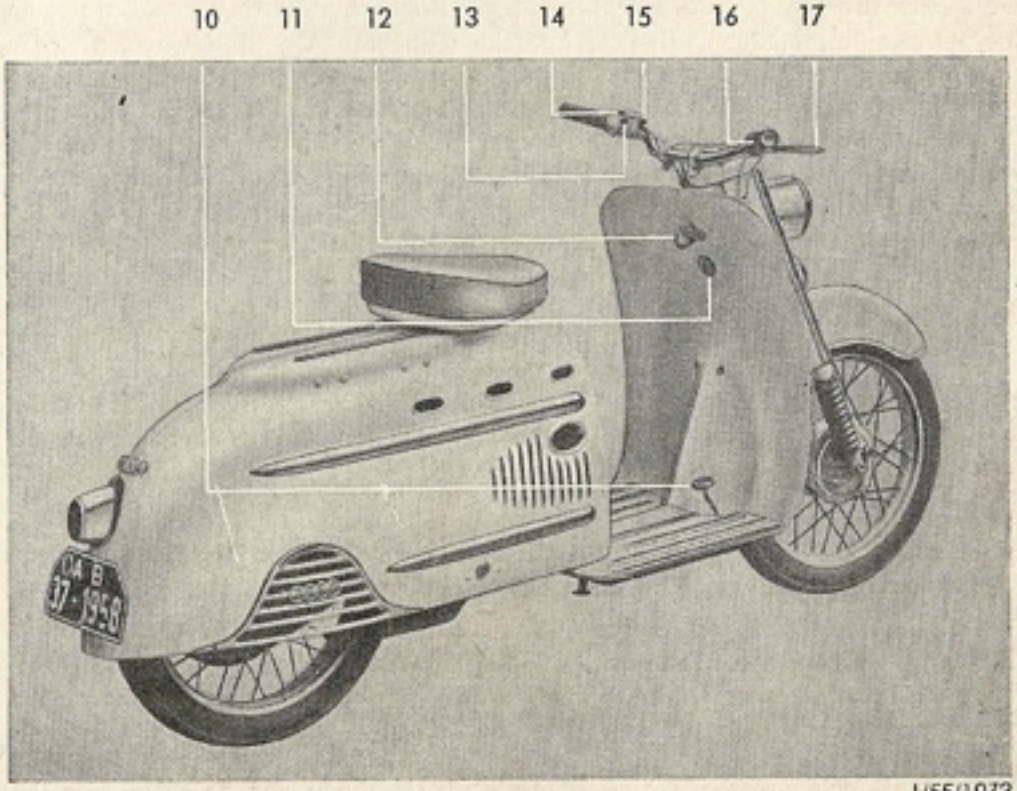
The "Hobby" de-luxe seen from the left.

10. Foot brake control lever
11. Steering lock catch
12. Hook for brief case, etc.
13. Horn button
14. Dipper switch
15. Light switch
16. Throttle twist grip
17. Hand brake lever



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The "Hobby" de-luxe seen from the right.

TECHNICAL DESCRIPTION

The engine

The four working strokes of an internal-combustion engine are: suction, compression, combustion, and exhaust. While a four-stroke engine requires two complete crankshaft revolutions for these four phases, in a two-stroke engine, suction and combustion take place in half a turn of the crankshaft, and exhaust and compression in the other half-turn, the result being that the whole working stroke is effected in a single complete crankshaft revolution. In a four-stroke engine the four working phases take place above the engine head in the cylinder combustion chamber, whereas in a two-stroke engine they are effected partly above, and partly below the piston in the crankcase. This allows the two-stroke engine to be more simply constructed, the engine having only three moving parts - crankshaft, connecting rod and piston.

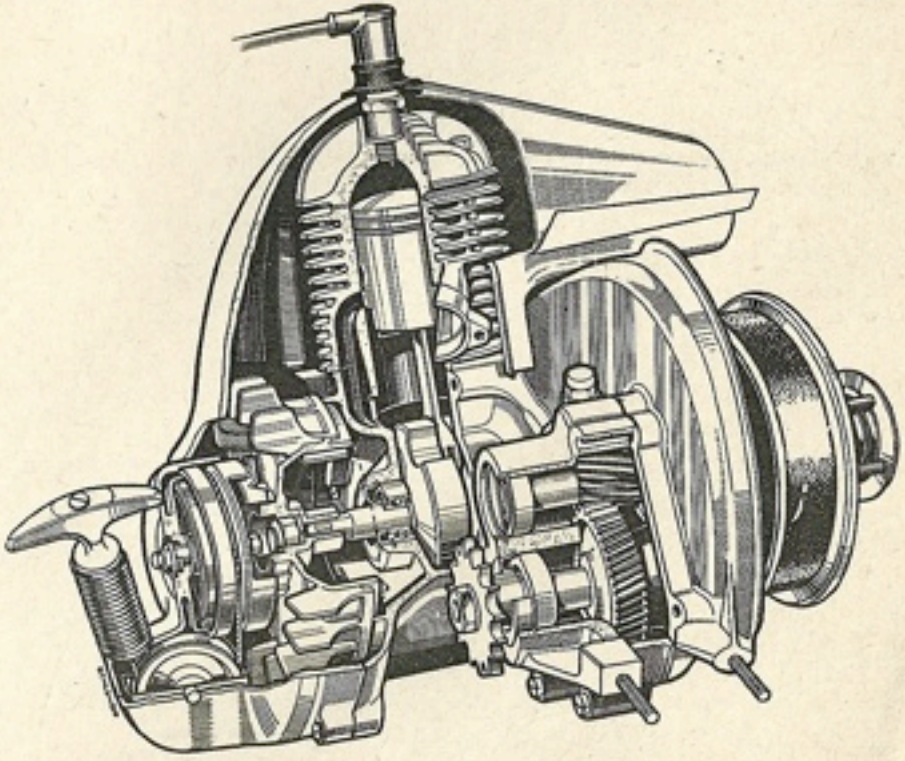
The engine works as follows:

As the piston moves downwards, a vacuum is set up in the airtight crankcase, so that as soon as the intake-duct leading to the carburetter is opened, a stream of petrol-oil-air mixture will flow into the crankcase. On its downward stroke the piston closes the intake and the exhaust ports and compresses the petrol-oil-air mixture in the crankcase. Approximately at Bottom Dead Center, the piston opens up the overflow port to the cylinder, the exhaust port being opened at the same time. The mixture flowing through two slots into the cylinder, moves upwards towards the cylinder head and drives the gases that are left after the previous combustion out of the cylinder, through the exhaust system and into the open.

By this time the piston is again moving upwards and closes the exhaust port again, and then compresses the gas mixture in the cylinder which will be fired shortly before the piston reaches Top Dead Center. As described at the beginning of this section, the upward stroke of the piston sets up a vacuum in the crankcase and the whole process is repeated.

The piston gives a power-stroke each time it moves downward. The crankcase itself is an integral part used in the completion of the four working phases. For this reason it is not filled with oil. The DKW engine is efficiently lubricated by the oil in the petrol and, at each stroke, a fresh supply of pure clean oil is fed to the engine. That is the origin of the term DKW "Fresh Oil-Mixture Lubrication". This relieves you of all worry and care and is the reason for the remarkably little attention required by the DKW two-stroke engines.

The actual design of the engine is relatively simple as can be seen from the accompanying diagrams.



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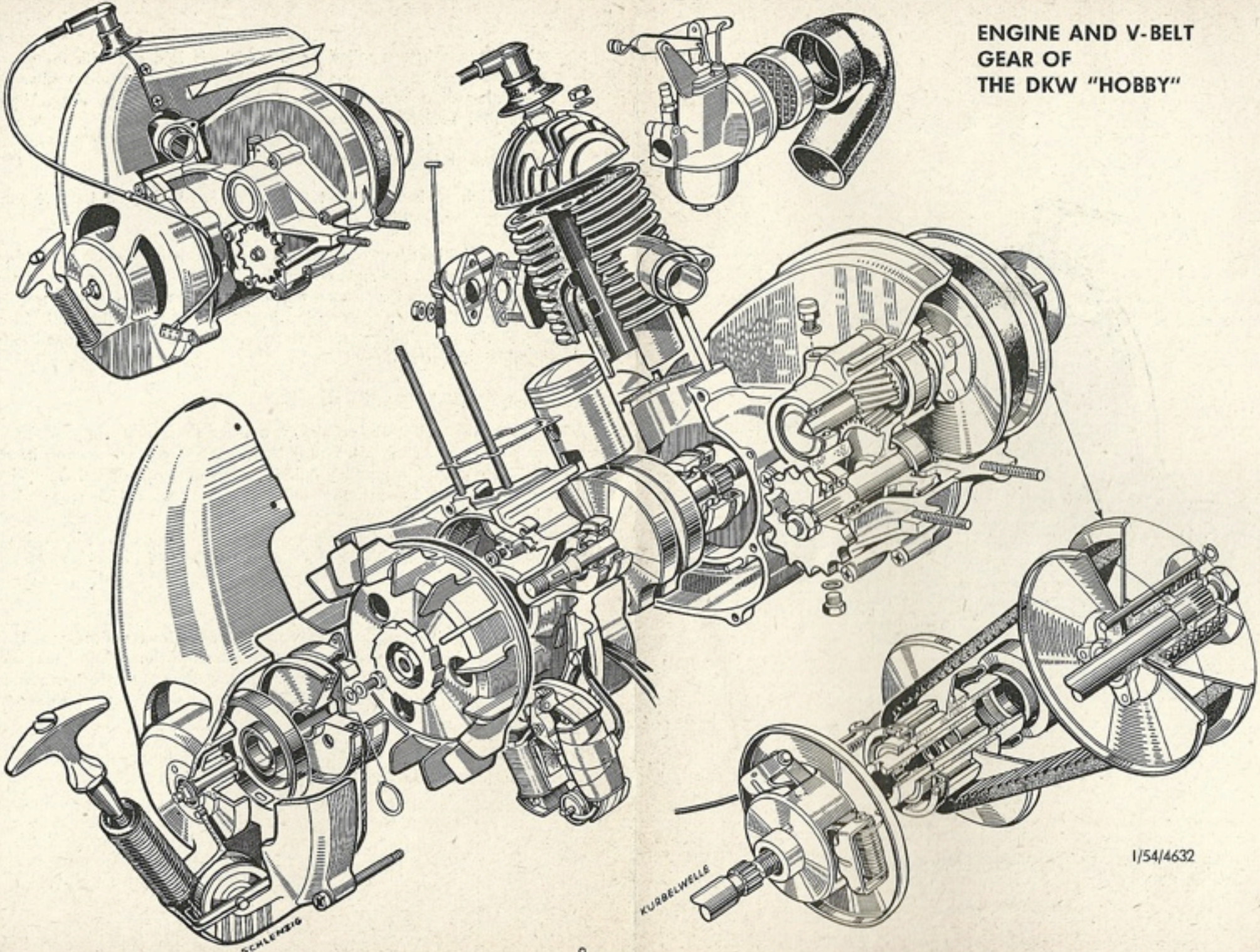
THE ENGINE UNIT OF THE DKW "HOBBY"

ENGINE AND V-BELT GEAR OF THE DKW "HOBBY"



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The gearbox

Normally, the gearbox supplied on a vehicle is laid out with three or four forwards speeds. In more recent times the large American automobiles have a standard fitting of a hydraulic type of infinitely-variable gearbox. These are termed infinitely-variable because they have a vast number of gear stages, and hydraulic, because instead of gearwheels and chains, a very thin oil is used to transmit power from the engine to the driving wheels.

The DKW "Hobby" is the only two-wheeled fitted with an infinitely-variable automatic gearbox — the system used is called Uher.

The infinite-variability between engine and intermediate gear is obtained by using a rubber V-belt. No matter what the conditions or circumstances, there is no necessity whatever for you to pay any attention to your gears when the scooter is in motion. The gearbox itself selects the correct gear ratio in accordance with the prevailing conditions and the speed. This is a gearbox which actually thinks for you.

This V-belt gearbox works as follows:

A belt pulley is fitted on the crankshaft and the shaft of the intermediate gear. In each case one half of each pulley (A 1 and B 1) can slide along its respective shaft. The adjustable pulley half (A 1) on the crankshaft is moved along the axle of its shaft by spring-loaded centrifugal weights (G) mounted on the fixed half of the pulley. When the engine is not running, the springs on the centrifugal weights draw the movable half of the pulley (A 1) inwards so that this butts up against the V-belt on the centre piece of the pulley. As soon as the engine starts up, the pull exerted by the centrifugal weigths pulls the pulley half (A 1) in towards the fixed half (A 2).

The adjustable pulley half (B 1) on the shaft of the intermediate gear is forced against the fixed half of the pulley (B 2) by a compression spring (F). This causes the formation of an extremely narrow V so that, when the engine is not running or is only ticking over, the V-belt (C) runs round the extreme outside edge of the pulley.

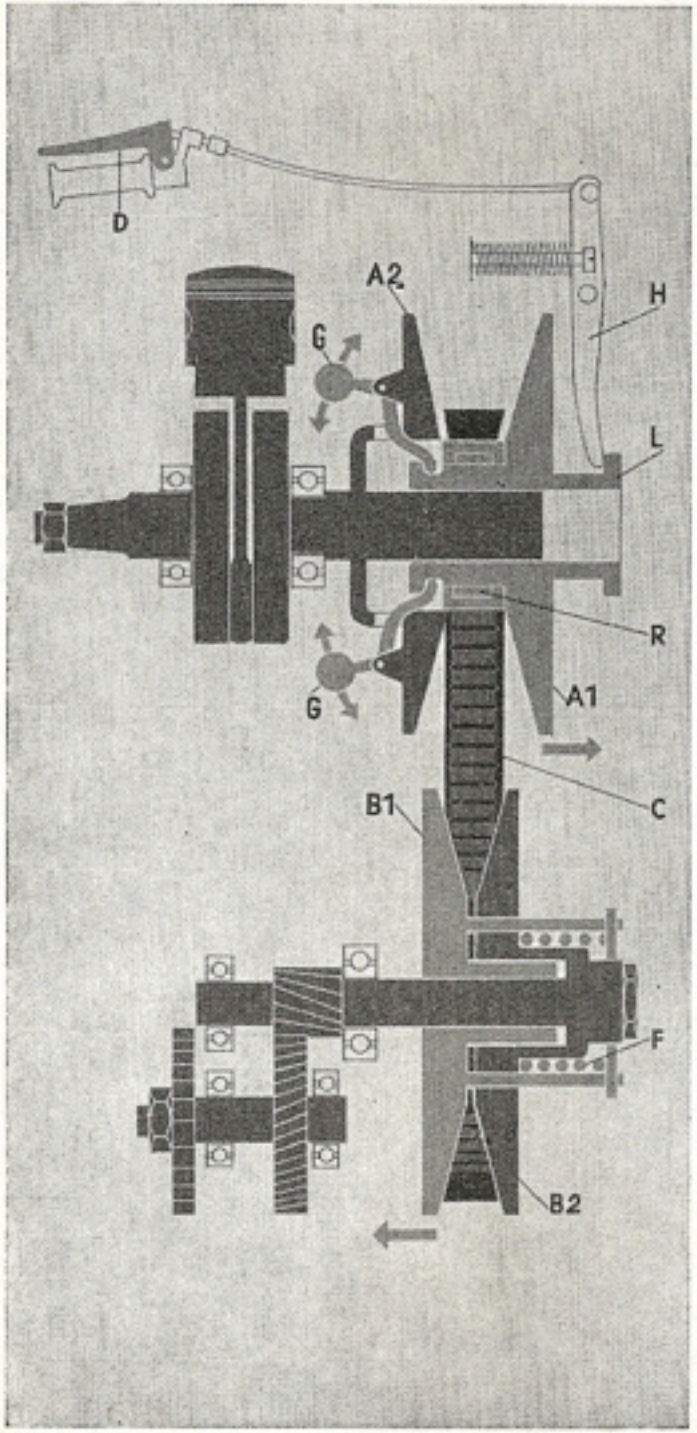
The three schematic diagrams show the gear in the idling position, position when starting off (lowest gear) and position at top speed (top gear).

The Infinitely-variable V-belt Gear

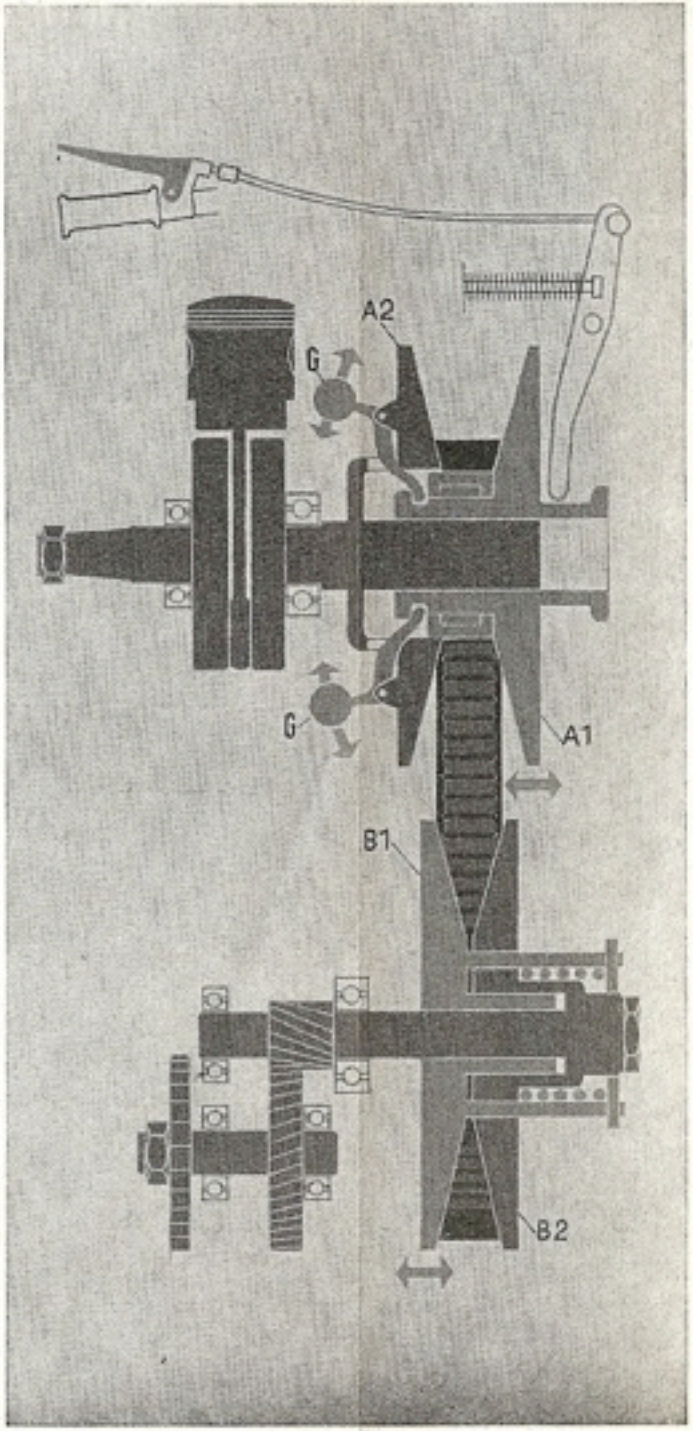
used on the DKW "Hobby"

—>

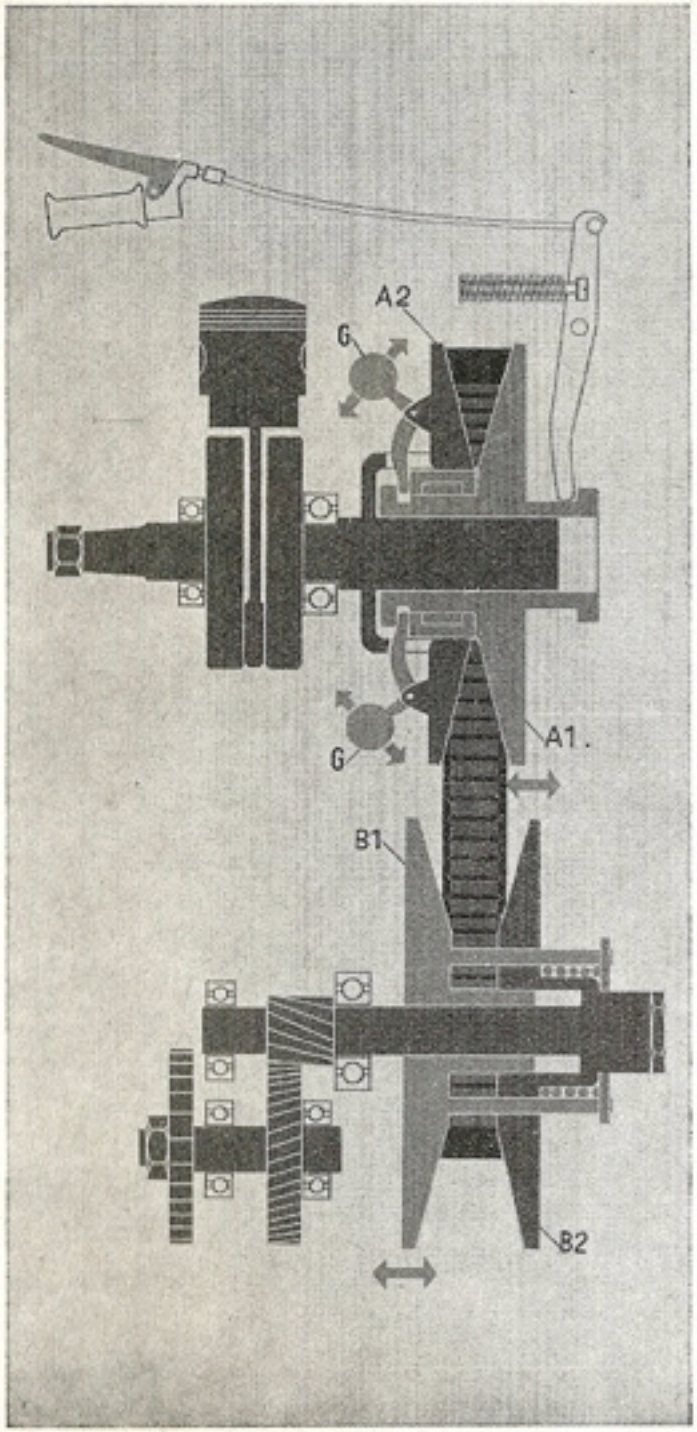
Open outwards to the right



a) Idle Running I/54/4571



b) Starting I/54/4572



c) Full Speed I/54/4573

I. PREPARATIONS FOR DRIVING

Filling and type of fuel used

Fuel is filled into your "Hobby" scooter by tipping the saddle forward after releasing the catch holding the saddle at its rear end. Turn the tank cap to the left and remove. The tank itself holds roughly 1¼ galls., ¼ gall. being reserve. Any commercial brand of petrol may be used.

When filling:

1. Switch off engine
2. In rainy weather protect filler from rain drops
3. Do not smoke or use open light of any kind.

The tank of your DKW "Hobby" is fitted with the new DKW mixer. This means there is no necessity whatever to mix oil and petrol in the usual type of mixing can. **First pour the oil into the tank** and then the quantity of petrol required. Note the following carefully:

1. The completely empty tank is first filled with approx. half a pint of oil (see lubricating schedule on page . . . . .) followed by 1¼ galls of petrol. Naturally, according to the amount of petrol in the tank any quantity less than 1¼ galls can be put in the tank with the suitable amount of oil.
2. In the winter months when the temperature is lower than + 32 degress F (0° C.) a certain amount of care and attention is required when filling vehicles fitted with a DKW Mixer. It is well-known that a certain amount of care has to be taken in the preparation of two-stroke mixtures used in winter time. The oil must be warm enough to run reasonably easy and should be drawn from a tank stored in a room with a temperature of at least 50° F (+ 10° C.).
3. It is no longer necessary to use the so-called self-mixing two-stroke oils which are more expensive than the usual motor oils.
4. The more expensive Premium oils are unnecessary for DKW.

From the mixture table you may easily see the ratio of petrol, oil and Desolite K (DKW Two-stroke additive), if available. We recommend always to empty the tank, except for the reserve fuel. Then you will know for certain that at least 8¾ pts. of petrol plus 0.35 pts. of oil can be filled.

Mixture table

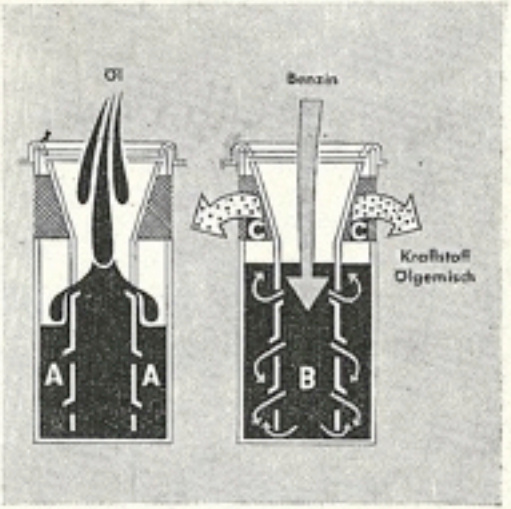
Petrol	pts.	1¾	3½	5¼	7	8¾	10½
Motor Oil SAE 50 or 40	cc.	40	80	120	160	200	240
	pts.	.07	.14	.21	.28	.35	.42
DKW Two-Stroke Additive	cc.	2	4	6	8	10	12

Due to the quality of to-day's petrols, corrosion may, under certain circumstances, form in the interior of the engine. Corrosion may be prevented by regularly using DKW Two-Stroke Additive "Desolite K", if available. This will also decrease the formation of undesirable combustion deposits (carbon) on piston head, cylinder head, and in the exhaust system.

If the DKW two-stroke additive is available in our DKW Service Workshops, it is sold in special 0.5 litre (0.9 pts.) cans for motorcycles. The lid also serves as a measure.

How the new DKW Mixer works

The mixer is safely fitted in the tank. Oil is first poured into the container A. Petrol is then poured in so that, due to the special design of the mixing pipe B, the oil and the petrol eddy backwards and forwards to thoroughly mix and flow, as a mixture, into the tank. Any oil not dissolved by the petrol is retained by filter C until further petrol is added and mixes with this oil to flow into the tank as a homogeneous mixture.



Oil poured into the DKW-mixer
The flow of fuel in the DKW-mixer

Oel = Oil Benzin = Petrol
Kraftstoff-Öl-Gemisch = Fuel/Oil mixture

Tyre pressures

The tyre pressures are very important. They are mostly responsible for the road safety of your scooter, its road-holding qualities, its performance and, last not least, the wear and tear on the tyres.

The rated tyre pressures are: —

	solo	with pillion passenger
front wheel	18 lbs./sq. in.	18 lbs./sq. in.
rear wheel	23 lbs./sq. in.	32 lbs./sq. in.

at a normal load (165 lbs).

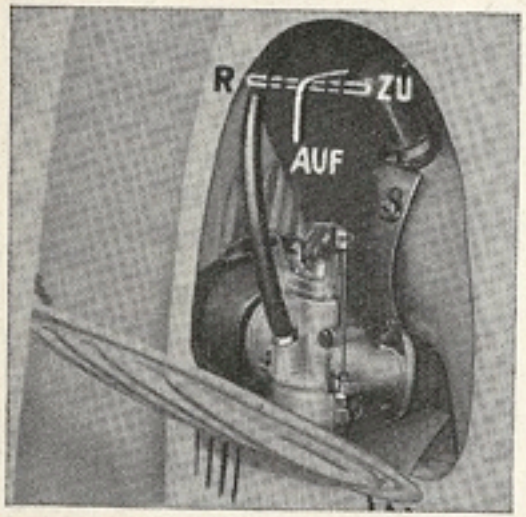
Though it is reasonable to have the tyre pressure checked and corrected every time you refuel, there is a hand pump stored in the tool compartment under the saddle for emergency cases (tyre puncture).

When pushing the DKW **"Hobby"** be certain to pull the disengaging lever. The slight scraping noise audible thereby, is by no means a defect, but a constructional characteristic of the stageless belt gear.

II. EXPLANATION OF THE MOST IMPORTANT CONTROL LEVERS

The fuel tap

The fuel tap is a three-way tap only accessible when the frontal grill of the engine cowling is open, as shown in the illustration. The grill is opened by pressing the knob of the catch and turning the tap downwards to the left. The three positions of the tap may also be seen from this illustration. The positions "Auf" (On) and "Zu" (Off) are obvious. In position "R" a fuel reserve of approx. ¼ gall. is used, with which you can drive about 30 miles (according to the speed at which you are travelling). Despite this reserve, do not forget to refuel in due time and to turn the tap to the usual position "Auf", before continuing. The fuel tap should always be closed when the scooter is not being used for any length of time (e. g. at night.) Turn the tap off also before raising the engine-cowling or before carrying out any work on the carburetter.



Frontal grill opend I/55/1879

The air control lever

One end of this lever protrudes through the frontal grill, and is used to help starting when the engine is cold. For this reason the lever is raised upwards so that the air-slide on the carburetter is closed. The air-slide is automatically re-opened when accelerating.

Caution! Never use the air-control lever when the engine is warm.

The throttle twist grip

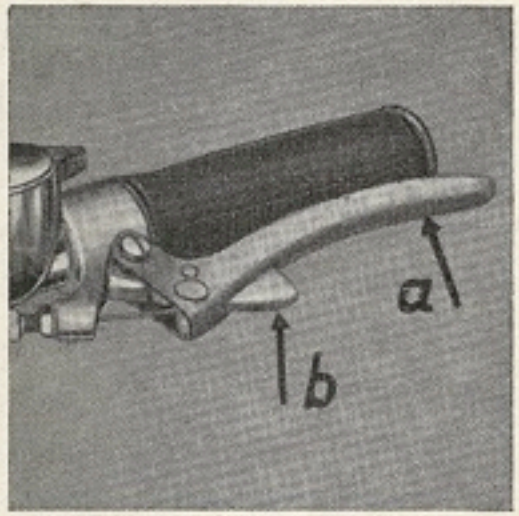
The throttle twist grip which is on the extreme right of the handle bar controls the position of the throttle-slide in the carburetter and thereby the speed and the performance of the engine. This twist grip is all you require to keep your Hobby scooter under perfect control in all traffic conditions, from slow walking pace to maximum speed, only by twisting it forward and backward.

Caution! Do not rev-up your engine to maximum speed when the scooter is on its stand, as the control cable for the disengaging device, and the disengaging device itself, might be damaged.

The disengaging lever with catch

The disengaging lever with catch on the extreme left of the handle bar is the most important control lever beside the throttle twist grip and you ought to pay attention to it. When the lever (arrow, Fig. . . .) is tightly gripped, the power transmission between the engine and the automatic gearbox is cut off. This is completely different from any other type of scooter or motorcycle equipped with the normal type of gearbox requiring the engagement and disengagement of the clutch each time a gear is engaged or disengaged. The disengaged lever on your DKW Hobby need only be actuated when your scooter is at a standstill and the engine running idle. Before starting your engine make certain that the disengaging lever is tightly gripped. On the other hand, there is no necessity whatever to use this lever again, thanks to the provision of the so-called infinitely-variable gearbox.

Only when starting off, slowly release the disengaging lever by drawing the lever close to the handle and pressing on the catch "a" (see illustration). You need not use the disengaging lever again until you want to stop, as described under "Driving" page . . .



Disengaging lever with catch I/55/1877

The starter handle

The starter handle on the left-hand side below the saddle is used to start the engine. For this purpose quickly and vigorously pull the handle upwards to about the level of the saddle. Retain a firm grip on the starter handle, and return it to its original position after the engine has started.

The brake pedal

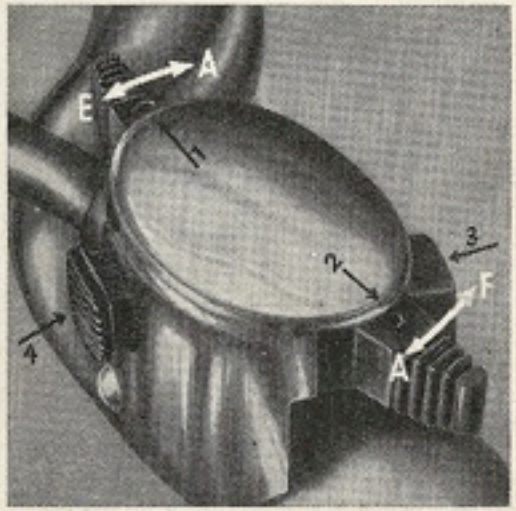
The brake pedal, located in front on the right-hand side of the bottom-plate, controls the rear-wheel brake when being depressed.

The hand-brake lever

The hand-brake lever on the right-hand end of the handlebar, in front of the twist grip, controls the front-wheel brake, which represents the main brake like on a motorcycle. When descending long hills, it is advisable to use both brakes in turn.

The multi-purpose switch

This switch combines the light and dipper switch, the horn button and the short-circuiter knob in one single unit (see illustration). Lever No. 1 is the light switch (E = on, A = off), No. 2 is the dipper switch (A = dipper light, F = high-beam light), the rear button No. 3 is the horn button and the front button No. 4 is the short-circuiter button for stop-



The multi-purpose switch I/55/1878

ping the engine. This last button is to be pressed until the engine ceases firing. The "Hobby" scooter is fitted with an A. C. system (without battery) which means that the lamps will only light and the horn only sound when the engine is running.

The stand

The stand on the left-hand side under the bottom plate, is used to prop-up safely your DKW "Hobby" and is pressed outwards with the foot.

Steering and saddle lock

A theft-proof lock is fitted in the steering head, which is accessible through an opening below the brief-case hook. Turn the handlebar to the right as far as possible, insert the key into the lock and press forward, slightly turning to the left. If the lock does not engage at once, just waggle the handlebar slightly. Return the key into vertical position and remove it.

The saddle lock, located on the left-hand side, secures the tool kit and fuel tank (under the driver's saddle) from unauthorized use. In the same way as the steering lock, the saddle lock and the key are pulled out to the stop, by turning them slightly to the left. Then the saddle can easily be turned down to the front.

III. DRIVING

Starting the engine

The engine is started as follows: —

a) Pull disengaging lever into idling-position — **Important!**
b) Open fuel tap (pointing lever downward — when on reserve, lever pointing to the right).
c) Raise air-slide lever, but only when engine is **cold** (accessible from outside through frontal grill).
d) Open twist grip about ¼ of total extension towards you (i. e. backwards).
e) Pull starter-handle quickly and strongly upwards.

If the engine does not start at the first pull, pull the starter-handle again until the engine fires. At most the engine should start after the second or third pull on the starter. If it doesn't, it is reasonable to suppose that the engine is flooded due to the petrol tap being left open when the scooter was standing idle for some time. Open up the twist-grip throttle as far as it will go, and then pull the starter vigorously several times. As soon as the engine **commences to fire,** immediately **close the throttle down** to its idling position.

In cold weather the engine is started in the same way. Only between the operations "d" and "e", pull out the starter-handle four or five times with the short-circuiter knob pressed down, thus allowing the engine to idle. Only then release the short-circuit knob, and quickly and strongly pull the starter-handle upwards. Upon the first or second pull the engine should start, providing the sparking plug and ignition-setting are in good order.

Starting off

Start the engine, push the stand back to its rest position and mount the saddle. With your left hand, grip the disengaging lever, press in the catch, and slowly and carefully release the lever. As soon as the scooter starts to move, accelerate immediately by the twist grip.

The **whole range of speed** from starting off to maximum speed and down again to stop, along the level, uphill and downhill, is **controlled simply and solely** with the **throttle twist grip,** thanks to the infinitely-variable gearbox and transmission fitted in the "Hobby" scooter. Should the engine suddenly stop or stall as you are starting off, you have probably either let out the disengaging lever too quickly or the engine was running too slowly. You will soon learn to start correctly and the engine idling speed can very easily be set as described in the maintenance hints given on page . . . . .

After the cold engine has been started up on the choke it is better if, for the first few hundred yards, the throttle is only opened halfway to prevent the engine from stalling and a more uniform flow of gas is given. Driving on half throttle in this way will ensure that the choke will not be opened fully — this is coupled with the throttle cable — and the cold engine is given a richer than normal mixture so that it performs better.

Braking

Before carrying out any braking actions, close down the throttle by turning the twist grip towards the front. When the speed is not too high, the best method of braking is to use the front or hand brake. In an emergency or when your scooter is travelling at a relatively high speed, brake by applying hand and foot brakes simultaneously. When descending a very steep incline it is better to brake with hand and foot brakes in turns to prevent the brake drums from overheating.

Stopping

When you wish to stop, slow down your vehicle by closing down the throttle and letting your scooter coast to the required stopping point, applying your brakes gently as you reach your stopping place. Shortly before coming to a stop, draw in the disengaging lever until this is held in place by the catch. The engine will continue to tick over even though the scooter is at a standstill. To stop the engine, press the short, circuiter knob. When you want to stop travelling downhill, release the disengaging lever (driving position). To a certain degree the engine acts as a brake and prevents the vehicle from running away. On steeper hills, place a block or a stone in front of the wheel.

IV. HINTS ON BREAKING-IN

We do earnestly advise that after registering your scooter you do not commence immediately to drive at fast speeds but rather, for a short time at least, drive carefully. During the first 65 miles the maximum cruising speed should not exceed about 28 to 30 m. p. h. Full throttle can be given for a few minutes or when overtaking another vehicle. During the following 200 miles your scooter should not be driven continuously at its maximum speed but rather the speed should vary between 30 and top speed. You can safely drive your "Hobby" scooter where and how you will, after the first servicing has been carried out at about 300 miles.

V. WINTER DRIVING

In cold weather you will especially appreciate the advantages of your DKW "Hobby", as it has a two-stroke engine operating with fresh-oil mixture lubrication, so there is no trouble with frozen oil. Without anxiety you may park your "Hobby" in the open even in the lowest temperatures.

The control cables

In winter the control cables are especially exposed to humidity. So there is a danger that the cables might freeze within the cable sleeves. Special attention should be paid to the gas control cable on the carburetter side. If, however,

the maintenance jobs are regularly carried out and the cables are carefully lubricated, this danger is virtually eliminated.

The flywheel magdyno

The flywheel magdyno should be checked by an authorized DKW service station before the beginning of the winter, as only its perfect working condition will guarantee winter driving without trouble.

The tyres

If necessary, drive with slightly less tyre precessure on very icy roads in order to improve road-holding quality.

Protection against corrosion

If you garage your "Hobby" during the winter, it is advisable to protect the interior of the engine. Jack up the scooter so that the rear wheel can run freely. Lift the rear wheel cowling, pull the lower rubber sleeve off the engine cover and turn it upwards. Keep about 10 c.c. of DKW two-stroke additive *) handy. Rev up the engine to a high number of revolutions with the disengaging lever released (driving position), quickly pour the DKW two-stroke additive *) into the rubber sleeve, at the same time pressing the short-circuiter knob until the engine has stopped. The engine sucks in the DKW two-stroke additive *) through the air cleaner. After the operation, the engine must not be started again, as otherwise the protecting effect of the DKW two-stroke additive *) would be eliminated. Store the vehicle in a dry room, if possible.

VI. HINTS FOR MAINTENANCE AND SERVICE

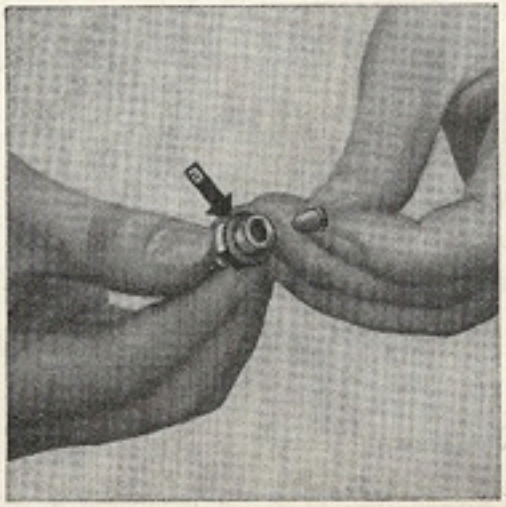
For all maintenance and service jobs stated in the enclosed Maintenance Chart, our far-reaching service organization is at your disposal. There you will find experts trained in our works school who are equipped with the necessary special tools and will only fit genuine DKW spare parts, in case of need.

The following paragraphs deal with a few maintenance jobs which you may carry out by yourself, providing you have some technical skill. **You will find the lubrication chart and the table of lubricants at the end of this Owner's Guide.**

Cleaning carburetter filter

A dirty filter will prevent fuel flowing from the tank into the carburetter and affect the performance. Close the fuel tap, disconnect fuel pipe from carburetter and unscrew the brass hose nipple. As shown in the accompanying illustration, carefully remove the filter from the hose nipple "a" using your fingers, and clean by blowing. Should the filter remain in the carburetter, use the end of a needle to remove it.

(From engine No. 03 039 381 on, the carburetter filter is no longer fitted)



Removing carburetter filter 55/1887

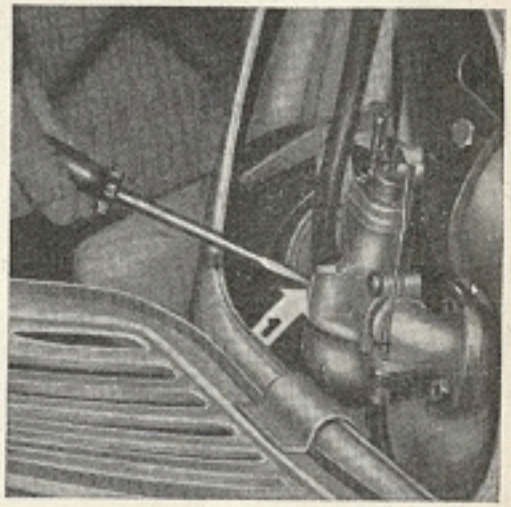
*) as far as available

Cleaning air filter

Remove the rubber sleeve between carburetter and engine and press filter out of the sleeve. Wash the filter with petrol in a clean tin and blow clean. When replacing the filter in the sleeve, make sure that it snaps home in the slot, wet with a few drops of engine oil. When refitting the sleeve, make sure that the filter is replaced correctly (not twisted), as this would cause a decrease of engine performance.

Setting idling speed

If, when the throttle twist grip is fully closed, the engine ticks over too slowly or stops altogether, this will lead to difficulties when starting off. The idling screw 1 — shown in the accompanying photo — is used to regulate the idling speed of the engine. The engine will run faster as the screw is turned inwards to the right, and more slowly as the screw is turned to the left.



Setting idling speed 1/55/1876

Replacing and checking sparking plug

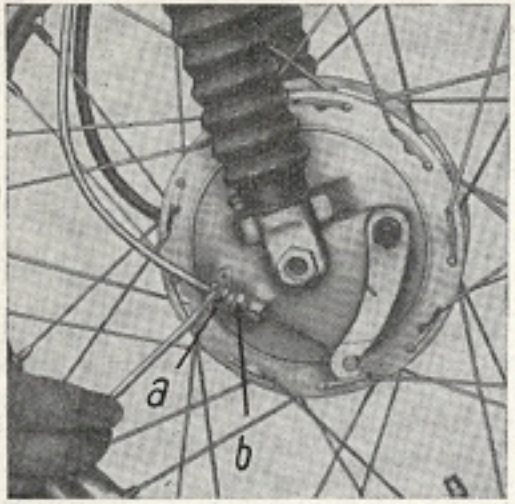
The sparking plug is removed by first withdrawing the plug socket, applying the plug spanner, screwing out the sparking plug with a sharp pull and checking the sparking plug gap.

The gap should measure 0.4 to 0.5 mm. If necessary, correct by bending the earth electrodes. In case you fit a new sparking plug, make sure that you obtain one as indicated on page 4, with correct sparking plug gap. When screwing in the sparking plug, do not forget the washer.

Replacing bulbs of headlamp and tail lamp

Loosen the slotted screw underneath the reflector ring (screw is prevented from falling out) and lift the reflector from the lamp housing. Uncouple the tension spring from the bulb socket and carefully press the socket itself out of the reflector. While turning the bulb to the left, press it backwards and pull it out. If only the filament on the headlight side of the bulb is burnt out, you may continue your journey using only the dipped headlight. If the dipper filament is burnt out, however, you cannot dip when another vehicle approaches you, as you would be completely without light. If you do quite a lot of night travelling, it is advisable for you always, to carry a 6 Volt 15/15 watt spare bulb, socket BA 15 b.

The 6 volt 2 watt tail lamp bulb with special socket can quickly be replaced after screwing off the lamp housing. Screw out the upper slotted screw and remove the housing. Above all, the tail light serves as a safety device.



Adjusting hand brake I/55/1874

Adjusting the brakes

The adjustment of the hand brake is effected by the adjusting screw at the lower cable end. First loosen the lock nut "b", then unscrew the adjusting screw "a" a few turns and retighten the lock nut. For adjusting the footbrake, lift the rear wheel cowling (unscrew the hexagonal screws on both sides) and remove the outer part of the chain case by simply unscrewing the nut of the swing-bearing (behind the exhaust pipe) and the nut of the wheel axle. The adjustment of the foot brake cable is carried out in the same way as described for the hand brake.

Removing and refitting front wheel

Place the DKW "Hobby" so that the front wheel turns freely. Press the brake lever backwards and uncouple the cable. If necessary, turn the adjusting screw downwards with loosened lock nut. Remove the inner speedometer cable to the left, after unscrewing the stud and withdrawing the outer speedometer cable to the rear. Then unscrew the nuts of the front axle on both sides, press apart the fork and withdraw the front wheel towards the ground. The refitting is effected in the reverse order.

Removing and refitting rear wheel

Lift the rear wheel cowling (hexagonal screws on both sides), unscrew only the left-hand outer nut on the chain case and hold the outer nut with a screw-driver in the right-hand spindle head. Then pull out the stub axle to the right. Withdraw the distance piece between wheel and right fork leg. Either place the scooter so that the rear wheel is off the ground, or carefully turn the vehicle on its left side and then remove the wheel. (Caution! Close the fuel tap!)

When refitting, make sure that the three slots of the rubber damping disc in the wheel hub fit on the three sleeves on the brake drum. Refit distance piece and stub axle and tighten the outer nut, while holding it with a screw-driver in the spindle head.

Drive chain and V-belt

The useful service life of the chain depends in the first place on regular and correct servicing according to the Maintenance Chart. The chain tension can be checked by an inspection hole in the lower part of the chain case (remove rubber cap). If the chain is properly adjusted, it can be pressed upwards by 15 to 20 mm. The rubber V-belt is to be checked for wear when carrying out maintenance work; the V-belt itself needs no maintenance. Its service life, too, depends on regular maintenance (lubrication) of the shafts over which the two pulleys run, and on the exact flushing of the pulley halves.

Lubricating Schedule

for DKW Hobby standard and de-luxe models

1. LUBRICATING WORK

No.	Greasing point	Lubricant sort	Greasing plan diagram	Greasing every . . . . miles
1.	Clean and lubricate disengaging lever bearing	○ **	6	1,250
2.	Control cables	△	—	1,250
3.	Guide tube for cable of disengaging lever	△	1	1,250
4.	Brake pedal bedding	○ or ▲	4	1,250
5.	Speedometer drive, if any	○ or ▲	—	1,250
6.	Spring casing of hand starter	○ or ▲	3	1,250
7.	Bearing bolts of stand	□	—	1,250
8.	Bearing and sliding points of secondary pulley	○ or ▲	5	1,250
9.	Clean and lubricate chain*)	○	2	7,500
10.	Change oil in intermediate gear	△	—	2,500
11.	Grease felt for contact breaker	■	6	7,500
12.	Clean and lubricate needle bearing on idler roller and bearing points of the drive and secondary shaft	▼	7/8	4,000
13.	Top up oil in telescopic fork	◘	—	7,500
14.	Clean and lubricate front and rear wheel bearings	▲	—	7,500

*) Dependent on the manner of driving and weather conditions, the greasing may be found necessary much earlier.

**) On first lubrication ○, afterwards ▲

EXPLANATION OF MARKS

- ○ Chassis grease
- ▼ Chain grease
- □ SAE 50 or 40 Motor oil
- ◘ SAE 20 Motor oil
- △ SAE 90 Gear oil
- □ Bosch bearing grease FT 1 V 4
- ▲ Multi-purpose grease
- ○ DKW Special Grease UNIVISTON DB 414

2. LUBRICANTS

□ Engine	branded motor oils SAE 40 or 50 API Service ML, MM, MS (with ML: use DKW Two-Stroke Additive *)
△ Intermediate Gear	branded gear oils SAE 90
◘ Telescopic Fork	branded motor oils SAE 20
○ ▲ Frame	chassis grease or multi-purpose grease
▲ Bearings	multi-purpose grease
■ Contact Breaker Cam	BOSCH bearing grease FT 1 V 4
O Disengaging Bearing	DKW Special Grease UNIVISTON DB 414 **)
▼ Drive Chain	DKW Chain Grease

*) as far as available
**) only for first lubrication, afterwards take multi-purpose grease

LUBRICATING POINTS

Fig. 1 II/57/756
Control cable of disengaging lever

Fig. 2 II/57/757
Grease felt for contact breaker

Fig. 3 II/57/758
Spring casing of hand starter

Fig. 4 II/57/759
Brake pedal bedding

Fig. 5 II/57/760
Drive shaft and hub of secondary pulley

Fig. 6 II/57/761
Disengaging-lever bearing, idler roller with needle bearing and driving bush on drive shaft

Fig. 7 II/57/762
Oil level of intermediate gear

Fig. 8 II/57/763
Oil drain of intermediate gear

Wiring Diagram

of DKW Hobby standard and de-luxe models

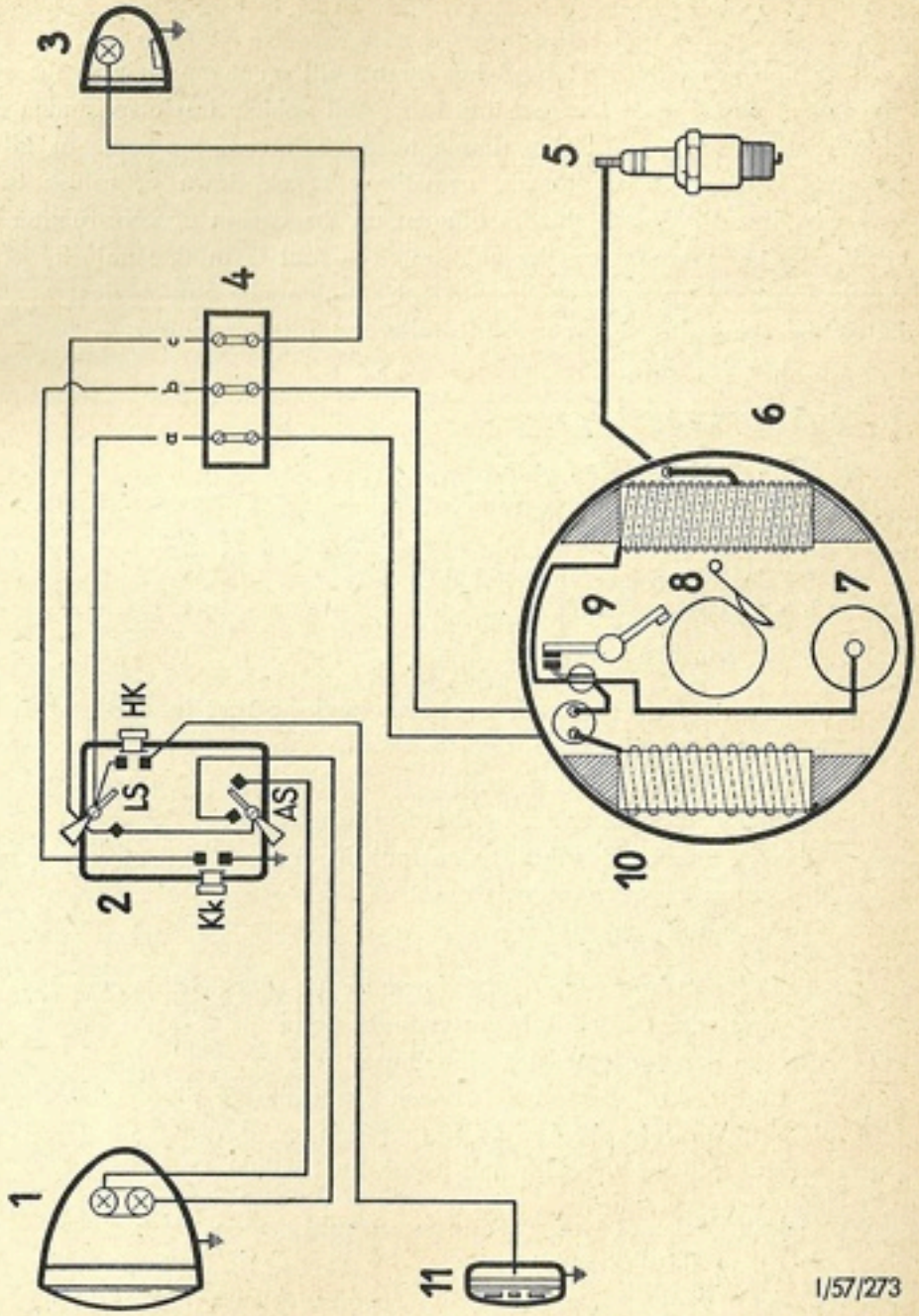
LEGEND:

1. Headlamp with twin-filament bulb
2. Combined light switch
   LS = light switch
   AS = dipper switch
   HK = horn button
   Kk = short circuiter button for ignition
3. Tail light and licence plate light
4. Terminal strip
   a = lead from dynamo to light switch
   b = lead contact breaker to short circuiter button
   c = lead light switch to tail and licence plate light
5. Sparking plug
6. Ignition coil
7. Condenser
8. Contact breaker cam
9. Contact breaker lever
10. Light coil
11. Horn

The following bulbs are fitted: —

Lamp	Bulb	Socket
Headlamp (twin filament)	C 6 V 15/15 W	BA 15 d
Tail and licence plate lamp	6 V 2 W	BA 9 s

WIRING DIAGRAM of DKW Hobby standard and de-luxe models



I/57/273

IV. DEFECTS AND THEIR REMEDY

Even though your DKW "Hobby" has been built on the principle "the simpler the better" and despite the fact that this small vehicle has a maximum degree of reliability and is childishly simple to drive it can, the same as all other technical articles or appliances, sometimes break down or refuse to work correctly. In no way can this be blamed on the design or construction of the scooter — as supposed by the uninitiated — but is in the majority of cases due to incorrect operation or insufficient maintenance and service.
Below we are listing a few possible failures and their causes —

1. Engine refuses to start

A. Engine not receiving petrol

a) Tank empty (observe reserve position)
b) Tap closed or dirty
c) Petrol filter in carburetter dirty
d) Petrol filter in tank dirty
e) Jet in carburetter blocked

B. With plug lead removed, no spark jumps across to earth when starter is pulled

a) Poor contact on plug lead
b) Ignition cable broken or shorting to earth
c) Nose on contact breaker does not lift or remains fixed in one position
d) Contact breaker contacts burnt
e) Condenser faulty or wet

C. Spark jumps from plug lead to earth but no spark visible across electrodes of plug when this is laid on cylinder head

a) Gap between electrodes too large
b) Carbon bridge formed between electrodes of plug
c) Plug insulator broken or wet outside
d) Plug oily or wet with fuel (check heat value)

D. Engine does not start readily when cold

a) Idling mixture too weak
b) Air leakage somewhere (have repaired by DKW workshop)

E. Engine does not start readily when warm

a) Air lever (choke) accidently pulled (mixture too rich)

b) Carburetter not straight
c) Float needle not closing properly, carburetter leaking
d) Leaky float

2. Engine runs irregularly (four-stroking)

a) Air filter dirty
b) Float needle not seating or bent
c) Needle jet faulty
d) Float faulty
e) Too much oil in fuel mixture
f) Ignition timing incorrect
g) Too much carbon deposited in mixture ports or in exhaust system
h) Mechanical change in silencer
i) Carburetter incorrectly adjusted (needle in slot 3)

3. Carburetter spits

(generally due to a too lean mixture or to incorrect ignition)

a) Fuel feed to engine insufficient due to dirty filters
b) Carburetter not straight
c) Carburetter loose (air leakage)
d) Faulty gasket on engine
e) Air filter either missing or at right angles to correct position
f) Carburetter incorrectly adjusted (wrong needle position)
g) Ignition timing incorrect
h) Plug loose in its thread or worn out
i) Sparking plug gap too large or too small
k) Condenser defective
l) Insulation on ignition cable defective
m) Contact breaker nose not moving
n) Contact breaker contacts burnt
o) Piston rings burnt into their grooves

4. Engine fails to rev at high speed

(scooter not reaching maximum speed)

a) Contact breaker gap too large
b) Contact beaker lever not moving
c) Fuel pipe or carburetter blocked or dirty

d) Heavy carbon deposits in combustion chamber
e) Belt on gear box has too much play (belt worn out)
f) Air filter dirty
g) Ignition timing incorrect
h) Brakes adjusted too tightly
i) Cooling fins dirty (engine gets too hot)

5. Engine stops suddenly

a) Fuel tank empty (switch to reserve)
b) Fuel filter or jet in carburetter blocked
c) Plug lead fallen off from plug
d) Faulty plug
e) Nose on contact breaker broken or contact material broken off
f) Magneto windings short-circuiting
g) Condenser defective

6. Headlamp fails to burn

(only lights when engine is running)

a) Headlamp or dipper filament burnt out
b) Light switch on handlebars defective
c) Break in leads
d) Dynamo faulty

7. Horn

(only sounds when engine is running)

a) Horn defective
b) Horn button faulty
c) Break in lead

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